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Notes on some seabirds of Pernambuco state, north-east Brazil

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Located in north-east Brazil, the state of Pernambuco (PE) has a coastline of 187 km (roughly between 07° and 09°S) dominated by sandy beaches fringed by the introduced coconut palm *Cocos nucifera*, with extensive mangroves of *Rhizophora mangle*, *Laguncularia racemosa* and *Avicennia* spp. only at river estuaries

(CONDEPE 1982, FIDEN 1987). The coastal climate is hot with a mean annual temperature of 25.5°C, and mean annual rainfall of 152.3 mm (INMET 2003).

The coast is important for various birds, mainly migrant shorebirds and terns that use the region as wintering and stopover areas (Azevedo-Júnior & Larrazábal 2002, Fedrizzi 2003). However, except for a few studies in the Fernando de Noronha archipelago (currently part of PE) (e.g. Nacinovic & Teixeira 1987) and in the north of the state (Azevedo-Júnior 1998), very little research has focused on the seabirds that occur in PE.

Here we review the distribution and present new data for some seabirds of PE, based on the literature, specimens in the ornithological collection of the Universidade Federal de Pernambuco (UFPE) and our own field work. For simplicity, we list geographical coordinates, some of them taken from Paynter & Traylor (1991), for each locality only on its first mention in the text. English names and taxonomic sequence follow del Hoyo *et al.* (1992, 1996), except for Atlantic Yellow-nosed Albatross *Thalassarche chlororhynchos*, where we follow Robertson & Nunn (1998). Biometrics (mm) of specimens are: exposed culmen (ec), total culmen (tc), wing length (wl), tarsus (tr), tail (ta) and total length (tl).

Species accounts

MAGELLANIC PENGUIN *Spheniscus magellanicus*

A common visitor to southern Brazil (Rio Grande do Sul) during the austral winter, which occasionally reaches north to Rio de Janeiro, with vagrants recorded north to Bahia (Sick 1997) and Alagoas (F. J. M. Pinto *in* Teixeira *et al.* 1988). The *Jornal do Comércio*, a local newspaper, noted an immature found alive at Itamaracá Island (*c.*07°45'S, 34°51'W) on 13 August 1999, which appears to be the northernmost record for this species in the Atlantic.

ATLANTIC YELLOW-NOSED ALBATROSS *Thalassarche chlororhynchos*

T. chlororhynchos is a globally threatened species (Endangered) which breeds on Gough and Tristan da Cunha (BirdLife International 2000), and is one of the commonest albatrosses off the Brazilian coast (Grantsau 1995). Coelho (1978) mentioned a record for PE, but did not provide the source, date or locality. It was based on a specimen (UFPE 799; juvenile; ec 117.75, tc 132.46, wl 495, tr 79.31, ta 170, tl 800) found alive at Maria Farinha beach (*c.*07°40'S, 34°50'W), municipality of Paulista, on 19 May 1978. Additionally, another juvenile found in PE (locality and date unknown) was sent to Recife Zoo, and is currently on display at the Natural History Museum of the Environmental Education Centre there.

ANTARCTIC PRION *Pachyptila desolata*

Although treated as a subspecies of Broad-billed Prion *Pachyptila vittata* (e.g. Harrison 1985), many recent authors (e.g. del Hoyo *et al.* 1992) consider it a species. Coelho (1978) reported its presence in PE, but did not mention a source, locality or date. The record was based on a specimen (UFPE 358; male; ec 26.92,

tc 34.50, wl 195, tr 30.94, ta 95, tl 285; collected by A. Cruz) found at Tamandaré beach (*c.*8°36'S, 35°07'W), municipality of Rio Formoso, on 25 July 1978. Further records from Guadalupe Environmental Protection Area (*c.*08°48'S, 35°07'W), in the municipalities of Tamandaré and Barreiros (Neves *et al.* 2000) were, in fact, based on the same UFPE specimen.

CORY'S SHEARWATER *Calonectris* (*diomedea*) *borealis*
This Palearctic migrant occurs off Brazil en route to and from wintering areas off southern South America (Vooren & Fernandes 1989, Sick 1997). Azevedo-Júnior (1991) reported two dead birds at Boa Viagem beach (*c.*08°07'S, 34°53'W), Recife, one of which (UFPE 3406; female; ec 45.35, tc 60.07, wl 370, tr 48.65, ta 141, tl 498; collected by S. M. de Azevedo-Júnior, 2 September 1990) is currently held in UFPE. In addition, UFPE obtained one (3404; female; ec 56.40, tc 68.33, wl 350, tr 54.10, tl 140; collected by S. M. de Azevedo-Júnior) from Tamandaré beach on 21 January 1991, and another (3405; male; ec 46.63, tc 61.85, wl 360, tr 54.29, ta 131, tl 470; collected by S. M. de Azevedo-Júnior) from Coroa do Avião (07°40'S, 34°50'W), municipality of Igarassu in July 1991.

MANX SHEARWATER *Puffinus puffinus*
Manx Shearwater occurs off the Brazilian coast en route to and from the wintering grounds off southern South America (Sick 1997). There is only one published record from PE, of one flying over the Coroa do Avião on 3 May 1992 (Azevedo-Júnior 1998). At the same locality, one (UFPE 3985; male; ec 34.2, wl 260, tr 42.2, ta 81; collected by S. M. Azevedo-Júnior) was mist-netted on 16 November 2003.

GREATER SHEARWATER *Puffinus gravis*
Coelho (1978) mentioned this shearwater for PE, without source, locality or date. The record was based on a specimen (UFPE 841; male; ec 44.19, tc 56.19, wl 312, tr 56.11, ta 110, tl 505; collected by A. G. M Coelho) found at Ponta de Pedras beach (*c.*07°41'S, 34°53'W), municipality of Goiana on 20 July 1978. Azevedo-Júnior (1991) reported 12 specimens found dead at Boa Viagem beach, of which two (3400; male; ec 45.94, tc 53.29, wl 315, tr 59.21, ta 120; and 3402; unsexed; ec 43.63, tc 50.16, wl 320, tr 54.24, ta 105; both collected by S. M. Azevedo-Júnior, in May 1990) are in UFPE. In addition, UFPE has one (949; unsexed; ec 49.11, tc 57.67, wl 350, tr 57.58, ta 100; collected by A. G. M Coelho) from Olinda (*c.*08°01'S, 34°51'W) in June 1980.

MASKED BOOBY *Sula dactylatra*
In Brazil, this booby breeds on offshore islands such as the Abrolhos, Fernando de Noronha and Atol das Rocas (Sick 1997). Azevedo-Júnior (1994) reported a specimen, originally banded (V-18954) on 17 December 1992 in the Biological Reserve of Atol das Rocas (*c.*03°45–03°56'S, 33°37'W), found alive at Gaibú beach (*c.*08°05'S, 34°51'W), municipality of Cabo de Santo Agostinho, on 12 August 1993. UFPE also obtained one (3684; juvenile; tc 96.43, wl 440, tr 44.14, ta 150, tl

750; collected by S. M. Azevedo-Júnior) from Boa Viagem beach on 16 April 2001. According to del Hoyo *et al.* (1992), young disperse extensively, but most adults are present year-round in the vicinity of colonies, presumably explaining the apparently accidental occurrence of juveniles in PE.

BROWN BOOBY *Sula leucogaster*
Previous PE records involved two observed off a reef at Recife in March 1943 (Lamm 1948), and a record reported by Coelho (1978) without precise locality or date. According to Coelho (*in litt.* 2003), this was based on some individuals he observed at Olinda, but he could not recall the date. Adults tend to stay around colonies, while young and non-breeders disperse widely (del Hoyo *et al.* 1992). The age of those individuals recorded in PE could not be determined, but they were probably juveniles on dispersal.

MAGNIFICENT FRIGATEBIRD *Fregata magnificens*
Lamm (1948) and Coelho (1978) mentioned the species' occurrence in PE, but did not provide localities or dates. According to Coelho (*in litt.* 2003) his record was based on some individuals he observed at Olinda on 7 July 1977. Azevedo-Júnior (1998) reported a juvenile flying over Coroa do Avião on 20 December 1988. Two juveniles were seen at the same locality on 27 February and 22 September 2003 (CJC & CEF). In addition, three were seen over Itamaracá Island on 23 August 2003 (CJC & CEF).

SOUTH POLAR SKUA *Catharacta maccormicki*
This transequatorial migrant breeds on the Antarctic continent and peninsula, and moves north in the non-breeding period as far as Alaska and Greenland (del Hoyo *et al.* 1996). Coelho (1977) reported one, originally banded (567.61211) at Ross Island (Antarctica) that escaped from Baltimore Zoo (USA) on 3 December 1969, and was caught by fishermen on 4 December 1970, 15 miles off Recife. Lara-Resende & Leal (1982) noted one, probably recovered in PE, but did not provide a precise locality, date or band number. UFPE obtained a dark morph (3137; male; ec 44.81, tc 53.40, wl 400, tr 59.84, ta 155, tl 600) caught by fishermen at Porto de Galinhas beach (*c.*08°24'S, 35°04'W), municipality of Ipojuca on 14 April 2000.

POMARINE SKUA *Stercorarius pomarinus*
A Holarctic migrant that winters at sea, mainly between the Tropic of Cancer and the equator, and off Australia (del Hoyo *et al.* 1996, Wiley & Lee 2000). In Brazil, it is known from São Paulo, Rio Grande do Sul, and from one record near the mouth of the rio Tapajós, Pará (Olmos 2000). On 22 May 2003, a dark morph was observed pursuing Common *Sterna hirundo* and Cayenne Terns *Thalasseus sandvicensis eurygnathus* near Coroa do Avião (CJC & CEF), the first record in north-east Brazil. According to Wiley & Lee (2000), return migration commences in mid April and extends to early June.

SANDWICH TERN *Thalasseus sandvicensis acuflavidus*
The first record from PE was reported by Lamm (1948), and consisted of a few individuals in a mixed flock with Common Terns *Sterna hirundo* near Recife on 8 October 1944 for several days. Thereafter there were no state records until up to four were seen at Coroa do Avião on 22–24 May, 19 July, 24 August and 22 September 2003, in mixed flocks with Cayenne *T. s. eurygnathus* and Common Terns (CJC & CEF). According to Voous (1977), misidentification involving the similar Cayenne Tern is common, as the two may flock together, at least in north-east Brazil (Teixeira *et al.* 1988, Sick 1997). However, Sandwich Tern is smaller and has an obvious black bill (from the base) with a small yellow tip, whilst Cayenne Tern may have a black bill but always has some yellow at the base and/or along the gonys (e.g. Junge & Voous 1955).

ROSEATE TERN *Sterna dougallii*
This tern breeds in North America, the Azores and north-west Europe. Wintering Roseate Terns in South America are primarily of North American origin (del Hoyo *et al.* 1996), but birds from the Azores have been caught in Bahia (Hays *et al.* 1997, 1999). Lara-Resende & Leal (1982) reported a specimen banded in North America that was recovered in PE, but did not provide a precise locality, date or band number. A juvenile was mist-netted at Coroa do Avião on 24 October 2003 (SMAZ). Measurements were: ec 28.9, wl 246, tr 12.5 and ta 110. It was moulting the fourth primary.

LEAST TERN *Sterna antillarum*
Breeds in eastern North America, Honduras and the Caribbean to north Venezuela, and winters in north Brazil (del Hoyo *et al.* 1996), but has been recorded south to Rio de Janeiro (Sick 1997). A juvenile (UFPE 3986; ec 25, wl 158, tr 16 and ta 64; weight 40 g; collected by S. M. Azevedo-Júnior) was mist-netted at Coroa do Avião on 26 October 2003.

YELLOW-BILLED TERN *Sterna superciliaris*
Restricted to South America, where it inhabits rivers, lakes and estuaries (Harrison 1985, del Hoyo *et al.* 1996). One was mist-netted at Coroa do Avião in October 1992 (Azevedo-Júnior 1998). At the same locality, an adult was observed foraging with a flock of Common Terns *S. hirundo*, and roosting on a sandbar with various shorebirds, on 21 June 2003 (CEF).

Concluding remarks

Besides such residents as boobies, frigatebirds and terns, the seabird community in PE (including the Fernando de Noronha archipelago), as well as elsewhere in north-east Brazil, includes (1) boreal migrants (e.g. Cory's Sheawater), en route to and from their wintering areas in southern South America; and (2) Southern Ocean birds (e.g. Atlantic Yellow-nosed Albatross), undertaking northward movements along

the Brazilian coast in the austral winter. Pelagic taxa are more common in April–May, when some may be found dead on beaches (Lamm 1948, Azevedo-Júnior 1991, this work). According to Olmos *et al.* (1995), strong winds associated with cold fronts originating in Antarctica may be important in explaining this phenomenon of seasonal mass mortality on the north-east Brazilian coast.

Another point to stress is that there are few studies of seabird distribution off north-east Brazil. Antas (1991) noted that ornithologists interested in seabirds are mainly resident in southern Brazil, and the lack of seabird studies in PE may explain the relative lack of records of common taxa such as Manx Shearwater and Sandwich Tern. Continuous surveys will probably reveal that both Northern Hemisphere and Southern Ocean breeders are more common in the region than previously supposed.

The occurrence of seabirds in a region dominated by sandy beaches and where the sea is oligotrophic is apparently linked to the high supply of nutrients from mainland ecosystems such as estuaries and associated mangroves, e.g. the mouth of the rio São Francisco, in Alagoas (Sousa 1993), and Mangue Seco, in Bahia (Hays *et al.* 1999). Furthermore, some near-shore shelf breaks are also important in recycling nutrients (Olmos 2001).

The Canal de Santa Cruz estuarine complex (including Itamaracá Island and Coroa do Avião islet), with its five river estuaries and *c.*32 km^2 of mangrove swamps (Barros *et al.* 2000) may be another relatively productive area, and it is unsurprising that most seabird records from PE are from this region, although it should be noted the area is near a large urban centre (Recife) and field surveys have been concentrated there. Thus far, 47 waterbird taxa have been recorded in this complex (Azevedo-Júnior 1998, Fedrizzi 2003, this work), and it was recently listed as important for Brazilian seabird conservation (MMA 2002). Despite its biological importance, the region suffers from uncontrolled tourism, and urban and industrial pollution. Urgent efforts must be made to ensure effective conservation for the Canal de Santa Cruz environment and its birds.

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On the type locality of the Cordilleran Buzzard *Buteo poecilochrous*

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In describing the type locality of *Buteo poecilochrous*, Gurney (1870) mentioned that the bird came from Yauayacu in Ecuador and that the specimen was sent, in 1877, from Ecuador to Messrs. Salvin & Godman in London by a certain Mr Buckley.

Hellmayr & Conover (1949) claimed that Yauayacu is in fact a transcription error, and the real name of the site in Ecuador is Yanayacu. Vaurie (1962) questioned this conclusion and stated that the type locality of *B. poecilochrous* corresponds to a place named Sarayacu. Vaurie (1962) based this on the fact that Buckley's collectors established camp in this place (also currently known as Pacayacu on some maps), on the eastern slope of the Andes (01°34'S, 77°30'W) at 1,500 m, south of Canelos on the río Bobonaza. Vaurie (1962) also claimed that Yanayacu is in truth on the río Corrientes in Peru (03°02'S, 75°15'W).

Nevertheless, the same author also believed that Sarayacu is too low for the Puna Buzzard to be found, since this species is typical of the high Andes, and it was possibly captured at higher altitude. Chapman (1926) also suggested this and stated